



# CICLO DE CONFERENCIAS HABLEMOS DE FÍSICA



FACULTAD DE CIENCIAS FÍSICAS

Ciclo especialmente orientado a estudiantes



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CICLO "HABLEMOS DE LA LUZ"

## Coherence of light: basic and recent results

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The coherence properties of optical waves account for the existence of correlations among light field fluctuations at two points and two time instants. Their study involves both theoretical and experimental issues. Just to give an example, let us note that, in spite of the great advances of optical technology, we are not yet able to record and recreate the waves that pass through a window, when the sun light illuminates the objects we see outside. This is because, for each temporal frequency (color), the coherence properties are specified by a four-dimensional correlation function, i. e., by a function depending on the four spatial coordinates of each pair of points across a surface. Since this represents an enormous quantity of information, methods for reducing its amount are to be sought. For this, as for many other problems, keys are to be found in the wealth of knowledge that coherence theory offers and keeps on enlarging through a continuing research activity. A number of examples will be presented.



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